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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,985	12/22/2003	Shui-Ming Cheng	N1085-00168	9060
8933	7590	11/28/2006	EXAMINER	
DUANE MORRIS, LLP IP DEPARTMENT 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103-4196			SCHILLINGER, LAURA M	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/743,985

Applicant(s)

CHENG ET AL.

Examiner

Laura M. Schillinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-35 is/are pending in the application.
- 4a) Of the above claim(s) 20-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Claim 35 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected claim, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/31/06.

Applicant's traversal is not persuasive because claim 35 pertains to a separate and distinct species as evidenced by its mutually exclusive characteristic.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al., "Sub-5 um Multiple-Thickness Gate Oxide Technology Using Oxygen Implantation," Int. Electron Device Meeting (IEDM), San Francisco, paper 21.1.1 (1998).

King teaches the following claimed limitations as cited below:

11. A device having a gate comprising:

O ions providing implants (Col.4, lines: 50-60) in a substrate of a device (Introduction);  
and

One or more additional gate regions covering all implants under the one or more additional gate regions, the ions forming thicker gate oxide regions (Introduction/New Technology), and reducing substrate resistance under each of the additional gate regions (Fig.3)

12. The device of claim 11, further comprising:

implanted ions in the substrate, the one or more additional gate regions covering the implanted ions (New Technology).

13. The device of claim 11, further comprising: a gate oxide covering the ions and being under the one or more additional gate regions (inherent- ions are implanted into the gate oxide layer- some portion of gate oxide material will be over the implanted ions).

14. The device of claim 11, further comprising:

a gate of the device (Fig.1);

a gate oxide under the gate and under the one or more additional gate regions (Fig.1); and

the gate oxide covering the ions (Fig.1)

15. The device of claim 11, further comprising

a gate electrode layer forming a device gate and the one or more additional gate regions (Fig.1); and

a gate oxide layer under the gate and under the one or more additional gate regions (Fig.1).

16. The device of claim 11, further comprising:

a device gate and the one or more additional gate regions being formed from a gate electrode layer (Fig.1); and

a gate oxide layer wherein the gate oxide layer is under the gate and under the one or more additional gate regions (Fig.1).

17. The device of claim 11, further comprising:

a thin gate oxide layer having a thicker gate oxide covering the ions (Fig.1);

a device gate on the thin gate oxide layer (Fig.1); and

the one or more additional gate regions being on the thicker gate oxide (Fig.1).

18. The device of claim 11, further comprising:

the thicker gate oxide being a selective epitaxy growth (Introduction).

19. The device of claim 11, further comprising

the substrate having STI enclosures for the ions (Col.4, lines: 25-35).

However, King et al teaches that the substrate is made of silicon but fails to specify that the substrate is SOI. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's teachings to include an SOI substrate. Such substrates are well known and conventional in the semiconductor art and it would have been understood that

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silicon substrates may include SOI. Moreover, King teaches to implement LOCOS isolation, but fails to specify STI isolation as recited in claim 19. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify King's teachings to include STI rather than LOCOS because both effectuate the same results and are well known interchangeable isolation techniques.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

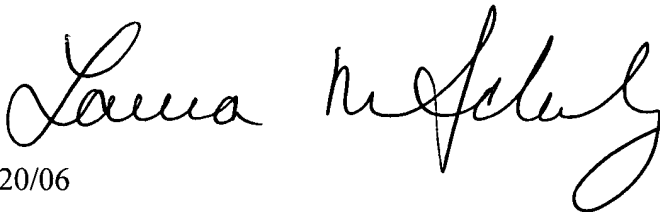
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M. Schillinger whose telephone number is (571) 272-1697. The examiner can normally be reached on M-T, R-F 7:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Laura M Schillinger", is written over a horizontal line.

Laura M Schillinger  
Primary Examiner  
Art Unit 2813

11/20/06